

REMARKS

The Office Action of August 17, 2010, has been carefully studied. Claims 17, 19-21 and 31-35 currently appear in this application. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration and formal allowance of the claims.

Claim Amendments

Claim 17 has been amended to recite that the solid support includes a diamond layer between the substrate and the electrostatic layer. Claim 33 has been added to define the diamond layer as a soft diamond layer that is a diamond-like carbon.

Support for this amendment and new claim 33 can be found in the specification as filed at page 6, line 23 to page 7, line 1 and at page 20, lines 16-20.

Claim 34 has been added to recite that a nucleotide is covalently bonded to the carboxyl group. Support for this claim can be found in the specification as filed at page 22, line 23 to page 23, line 6.

Claim 35 has been added to recite the thickness of the surface-treated layer. Support for this claim can be found in the specification as filed at paragraph [0033].

Claim Interpretation

Claim 17 has been amended to recite that the carboxyl group is present for introducing a functional group for covalently binding to a nucleic acid. That is, the nucleic acid is bonded covalently to the chemically modifying layer.

Art Rejections

Claims 17, 19, 20 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mao et al., US Published application 2003/0124332 in view of Minus et al., WO 01/102538. The Examiner concedes that Mao does not teach a nucleic acid molecule bonded covalently to the chemically modifying layer.

This rejection is respectfully traversed.

The claims have been amended to recite that the solid support contains a surface-treated layer comprising a diamond layer between the substrate and the electrostatic layer. Neither Mao nor Mirus teaches or suggests such a layer on a solid support.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mao in view of Mirus and further in view of Woo et al., US 5,929,194.

This rejection is respectfully traversed.

There is nothing in any of Mao, Mirus or Woo that teaches or suggests a solid support including a surface-treated layer comprising diamond.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mao in view of Mirus and further in view of Bertrand et al., *Macromol. Rapid Commun.* 2000, **21**:319-348.

This rejection is respectfully traversed.

None of Mao, Mirus or Bertrand, either alone or in combination, teaches or suggests a solid support including a surface-treated layer comprising diamond.

Claims 17, 19, 20, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (Thesis submitted to MIT June 2000, pages 1-49) in view of Mirus. Alternatively, claims 17, 19, 20, 31 and 32 are rejected under 345 U.S.C. 103(a) as being unpatentable over Mirus in view of White.

This rejection is respectfully traversed.

Neither Mirus nor White teaches or suggests a solid support including a surface-treated layer comprising diamond.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over white in view of Mirus and further in view of Woo.

This rejection is respectfully traversed.


None of White, Mirus or Woo, either alone or in combination, suggests the presence of a surface-treated layer comprising diamond.

Appln. No. 10/521,176
Amd. dated December 16, 2010
Reply to Office Action of August 17, 2010

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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